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EXAMINER	
DAVIS, MINH TAM B	
ART UNIT	PAPER NUMBER
1642	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/967,305	RICHARDSON ET AL.	
	Examiner	Art Unit	
	MINH-TAM DAVIS	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *33,34 and 59-102* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *33,34 and 59-102* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Applicant adds new claims 80-102.

Accordingly, claims 33, 34, 59-102, SEQ ID NO:1, SEQ ID NO:3 are examined in the instant application, wherein the claims are examined only to the extent of measuring the mRNA level of the alpha-methylacyl-CoA racemase comprising SEQ ID NO:1 or SEQ ID NO:3. It is noted that SEQ ID NO:3 is the open reading frame of SEQ ID NO:1.

NEW REJECTIONS BASED ON THE AMENDMENT

Objection

Claims 33, 34, 59-102 are objected to, because the language alpha-methylacyl-CoA racemase mRNA "comprising" the nucleic acid molecule "consisting" of SEQ ID NO:3 or SEQ ID NO:1 in claims 33, 80, respectively, is confusing, in view that "comprising" is an open language, and "consisting of" is a closed language.

This objection can be obviated by amending the claims, for example, to delete "consisting of".

Claim Rejections - 35 USC § 112, Second Paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 33-34, 59-102 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 33, 34, 59-102 are indefinite, because in claims 33, 80 the alpha-methylacyl-CoA racemase mRNA **cannot** "comprise" the cDNA SEQ ID NO:3, or SEQ ID NO:3, respectively, in view that cDNA is reversed transcribed from its mRNA, which is a single strand.

This rejection can be obviated, by amending the claims, for example, to recite "alpha-methylacyl-CoA racemase comprising the nucleic acid molecule SEQ ID NO:3 or SEQ ID NO:1".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 33, 59-80, 82-102 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,395,278 B1, of record, in view of Dong et al, 1996, World J Urol, 14: 182-189, and as evidenced by Ramsay G, 1998, Nature Biotech, 16(1): 40-4, of record.

Claims 33, 80 are drawn to: A method for identifying candidate therapeutic agents for the treatment of prostate cancer, comprising:

a) obtaining a test sample comprising metastatic prostate tumor cells,

b) exposing the test sample to a test compound,

c) measuring the mRNA level of expression of alpha-methylacyI-CoA racemase comprising SEQ ID NO:3, or SEQ ID NO:1, or the complete complement thereof,

d) identifying the test compound as a candidate therapeutic agent for the treatment of prostate cancer if the level of expression of alpha-methylacyI-CoA racemase mRNA in the test sample exposed to the test compound is less than a control test sample not exposed to the test compound

Claims (59-72), (82-95) are drawn to: The method of claim 33, or claim 80, respectively, wherein the probe comprises a fragment of SEQ ID NO:3, or SEQ ID NO:1, respectively, or the complement thereof, the fragment comprising at least 15, 20, 25, 30, 40, 50, 75, 260, 300,400, 500, 800, 900, or 1000 consecutive nucleotides of SEQ ID NO:3 or SEQ ID NO:1.

Claims 73, 74 are drawn to: The method of claim 59, or claim 34, respectively, wherein the probe or the alpha-methylacyl-CoA racemase mRNA is immobilized on a surface.

Claim 75 is drawn to: The method of claim 33, wherein step (c) comprises amplification of the alpha-methylacyI-CoA racemase mRNA

Claims 76-79 are drawn to: The method of claim 59 or claim 34, respectively, wherein the probe is detectably labeled with a chemiluminescent label, a fluorescent label, a radioactive label, or a colorimetric label.

Claims 96-97 are drawn to: The method of claim 82, or claim 83, wherein the probe or the alpha-methylacyl-CoA racemase mRNA is immobilized on a surface, respectively .

Claim 98 is drawn to: The method of claim 80, wherein step (c) comprises amplification of the alpha-methylacyI-CoA racemase mRNA

Claims (99-100), (101-102) are drawn to: The method of claim 82 or claim 81, respectively, wherein the probe is detectably labeled with a chemiluminescent label, a fluorescent label, a radioactive label, or a colorimetric label.

US 6,395,278 B1 teaches a prostate specific polynucleotide of **SEQ ID NO:107**, a full length cDNA of 1621 nucleotides in length (also referred as F1-12 or P504S) (column 8, lines 14-15, and SEQ ID NO:107 in columns 141-142, bridging columns 143-144). Under MPSRCH sequence similarity search, SEQ ID NO:107 of 1621 nucleotides in length, is **99.9% similar to SEQ ID NO:3**, spanning most of SEQ ID NO:3, from nucleotide 26 to the end, nucleotide 1146, of SEQ ID NO:3 (MPSRCH search report, 2005, us-09-967-305-3.olig.rnpb, page 11, of record). US 6,395,278 B1 also teach that using PCR, the mRNA expression level of F1-12 is found overexpressed in **prostate** tumors, detectable in normal kidney, but not detectable in all other normal tissues tested, which include prostate (column 46, item under Example 2, especially lines 20-26,and lines 46-51, and column 47, lines 3-5). In addition, US 6,395,278 B1 teaches that a portion of a sequence complementary to a coding sequence (**antisense** polynucleotide) could be used to modulate gene expression (column 22, lines 16-33). Further, US 6,395,278 B1 teaches that the composition comprising the described polynucleotides, or a portion thereof, are used for **inhibiting cancer** (column 2, lines 28-36, 64-67). US 6,395,278 B1 further teaches that the polynucleotides may be prepared by screening a **microarray** of cDNAs for tumor-associated expression, or alternatively by **amplification** (column 20, lines 31-58). Moreover, US 6,395,278 B1 teaches that for hybridization techniques, a partial sequence may be **labeled**, for example, end-labeling with p32, using well known techniques. US 6,395,278 B1 teaches that spectroscopic

methods may be used to detect dyes, **luminescent and fluorescent** groups (column 38, lines 65-66).

US 6,395,278 B1 **does not** teach a method for identifying candidate therapeutic agents for the treatment of prostate cancer, using a test sample comprising **metastatic** prostate tumor cells. US 6,395,278 B1 does not teach that the probe of at least 15, 20, 25, 30, 40, 50, 75, 260, 300,400, 500,800, or 900 consecutive nucleotides.

Dong et al teach that acquisition of metastatic ability by prostate cancer cells is the most lethal aspect of prostate cancer progression, and that one this has occurred, definitive therapy is required before the initially localized metastatic cells escape from the prostate (abstract, lines 7-11). In other words, **metastatic** prostate cancer cells are inclusive in the prostate cancer tissue, at least in the early stage of metastatic prostate cancer.

Ramsay G teaches microarrays of **immobilized** DNA or oligonucleotides for detection of expression of genes.

It would have been prima facia obvious to a person of ordinary skill in the art at the time the invention was made to screen for candidate antisense polynucleotides of SEQ ID NO:107, a gene that is overexpressed in prostate cancer, as taught by US 6,395,278 B1, using microarray, or amplification, as taught by US 6,395,278 B1, and as a test sample, prostate cancer cells comprising metastatic prostate cancer cells, because metastatic prostate cancer cells are inclusive in the prostate cancer tissue, in view of the teaching of Dong et al, and because metastatic prostate cancer is the most lethal prostate cancer, once the initially localized metastatic cells escape from the prostate, as taught by Dong et al. In addition, it would have been obvious to

screen for antisense fragments of any size of SEQ ID NO:107, to obtain a large number of available antisenses.

One would have expected that measuring the mRNA expression level of SEQ ID NO: 107, for example by hybridization or by amplification, would also detect the level of SEQ ID NO:3 or SEQ ID NO:1 of the claimed invention, in view of the extensive homology between the two sequences. In other words, measuring the level of expression of SEQ ID NO:107 is indistinguishable from measuring the level of expression of SEQ ID NO:3 or SEQ ID NO:1 of the claimed invention.

One would have expected that in the microarray detection of expression SEQ ID NO:107, taught by US 6,395,278 B1, the probe or the target gene is immobilized on a surface, because in microarray applications, DNAs are **immobilized** on a surface, as evidenced by Ramsay.

The motivation is to obtain candidate antisense polynucleotides, for use in inhibiting prostate cancer, in view of the teaching of US 6,395,278 B1 that the composition comprising the described polynucleotides, or a portion thereof are used for inhibiting cancer. One of ordinary skill in the art would have been motivated to screen for the antisenses with a reasonable expectation of success that the antisenses would be obtained and would be a candidate for the treatment of prostate cancer.

It is noted that US 6,395,278 B1 is the parent case of US20020051977A1, cited in the MPSRCH search report.

2. Claims 34, 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,395,278 B1, in view of Dong et al, and as evidenced by Ramsay et al, supra, as applied to claims 33, 80 above, and further in view of

Sambrook et al, Molecular cloning: A Laboratory manual, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, p. 9.47-9.55, of record, and US 6,146,827 (Levinson et al, filed on 10/10/1997).

Claims 34, 81 are drawn to: The method of claim 33, or claim 80, respectively, wherein step (c) comprises exposing the test sample to a nucleic acid probe which hybridizes to a nucleic acid molecule consisting of SEQ ID NO:3 under hybridization in 0.5M sodium phosphate, 7% SDS at 65°C, followed by one or more washes at 0.2X SSC, 1% SDS at 65°C, wherein the nucleic acid probe comprises a fragment of the full-length complement of SEQ ID NO:3.

US 6,395,278 B1, Dong et al and Ramsay et al do not teach the specific hybridization conditions cited in claim 34 or claim 81.

Sambrook et al teach various hybridization and wash conditions of radiolabeled probes to immobilized nucleic acids.

US 6,146,827 teaches that hybridization and wash conditions are known in the art, and will vary predictably depending on the specific organisms from which the library and the labeled sequences are derived (column 9, paragraph before last). US 6,146,827 cites Sambrook et al for guidance regarding such conditions (column 9, paragraph before last). US 6,146,827 teaches that the salt concentration in the wash step is about 0.2 x SCC at 50^0 C for high stringency conditions, wherein the temperature can be increased to 65^0C for high stringency conditions (column 9, last two paragraph, bridging column 10). One of the cited hybridization conditions taught by US 6,146,827 is the same as the condition cited in claim 34 or claim 81 (column 10, first paragraph).

It would have been obvious to use the hybridization and wash conditions as recited in claim 34 or claim 81, for screening the antisenses in the method taught by US 6,395,278 B1,

Dong et al, and Ramsay et al, because they are standard high stringent hybridization and wash conditions, in view of the teaching of Sambrook et al, and US 6,146,827, for specifically detecting the target polynucleotide sequence.

Conclusion

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MINH-TAM DAVIS whose telephone number is 571-272-0830. The examiner can normally be reached on 9:00 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SHANON FOLEY can be reached on 571-272-0898. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MINH TAM DAVIS
March 08, 2007

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